

# Start Smart



# GUIDE FOR FUTURE CATTLEMEN

AMERICAN JUNIOR SHORTHORN ASSOCIATION



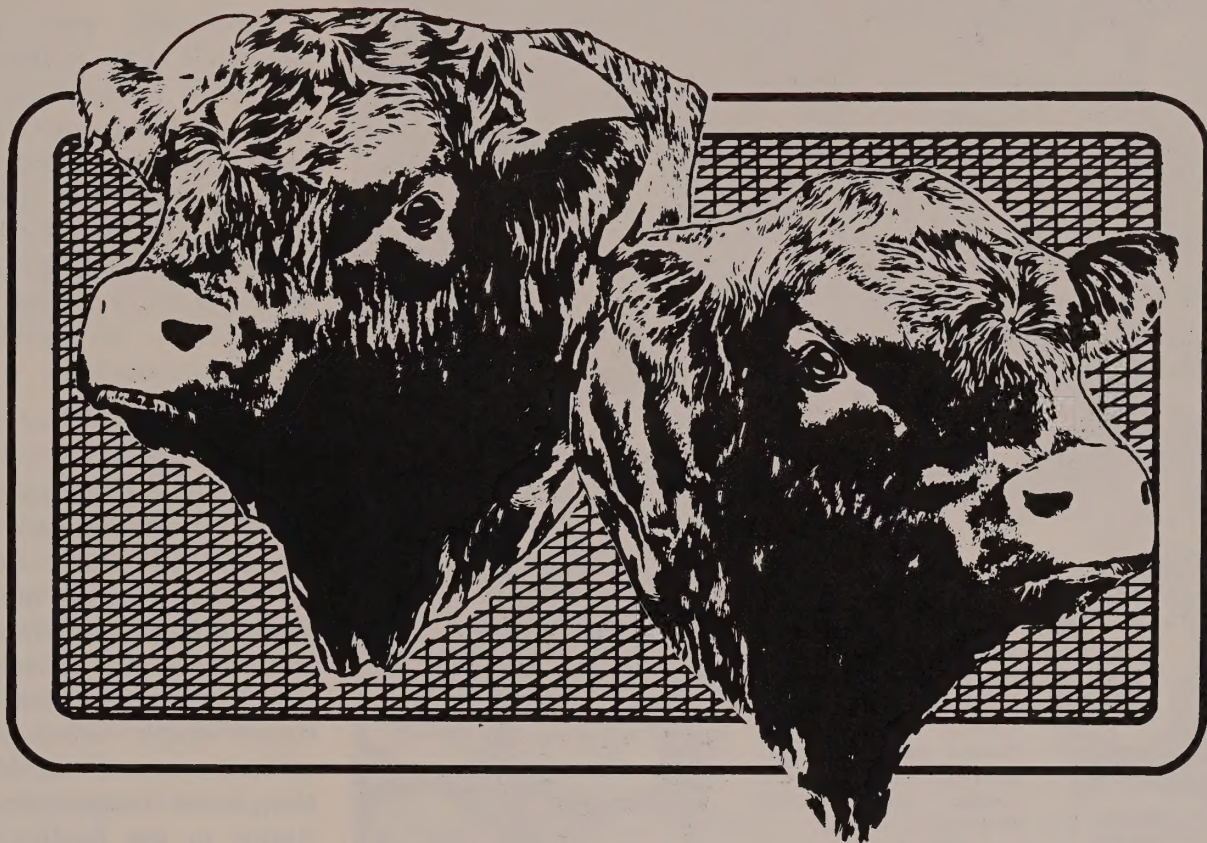
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Prepared by the American Junior Shorthorn Association in cooperation with The Shorthorn Foundation, Betty Royon, President.



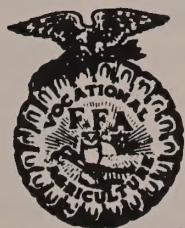
# ***THE SHORTHORN INFLUENCE***



This booklet is designed to acquaint you with a few of the facts involved in the production of beef cattle and the raising and showing of a beef project.

Shorthorns and Polled Shorthorns are very similar except for the Polled having the natural characteristic of being without horns. Records indicate Shorthorns were the first registered beef breed in America. They have become known for their ruggedness and stamina and their ability to acclimate to most any condition.

The Shorthorn influence is universally respected for its high weaning weight, the milking ability of mother cows, the persistency of bulls and the ability to tack on gains, rapidly and efficiently.



8288 Hascall St. Omaha, Nebraska 68124



# YOUR SHORTHORN PROJECT

America's oldest recognized breed of beef cattle. During one period of our early history Shorthorns were widely known as Durhams. As early as 1846 the First American Herd Book was published and in 1882 the American Shorthorn Breeders Association was formed.

Shorthorns were popular with America's early settlers. They valued this breed for meat and found Shorthorns a willing power for wagon and plow. The breed followed pioneer wagons across the Great Plains and into the Far West. By 1854 Midwestern farmers had begun direct importations from Scotland concentrating their efforts on Shorthorns strictly for beef production.

Although Shorthorns came first, in 1870 Midwesterners discovered "natural hornless" cattle occurred from time to time in horned herds. Thus, Polled Shorthorns were discovered and it was found they have all the Shorthorn superiority as a beef brand—quick adaptability, earlier maturity, quiet, easy-feeding disposition, good foragers, popular and profitable in the feedlot, plus Natural Hornlessness. The Polled Shorthorns are an all-American product, developed by thinking breeders. They are tops in weight-for-age, gentleness, quality and modern type.

Shorthorns were crossed with Longhorns and provided the first real beef improvement known in America. It has long been an established fact by only first improving purebred cattle can imperative changes be brought about in the entire beef cattle production. Our Shorthorns are an integral part of this improvement and this fact is shown in the increased acceptance of Shorthorns by Commercial cattlemen as well as purebred breeders. The modern Shorthorn bull, when used by the Commercial cattleman, is setting new production records and more than living up to the name of "The Great Improver."



There is no question as to the outstanding contributions Shorthorns have made to the beef industry around the world. Modern beef animals we see today on the range, in the feedlots, in farm pastures, anywhere beef cattle are produced were

influenced by Shorthorns at one time or another.

Shorthorns originated in Northern England about 1600. From there they moved to Scotland and then to America in 1783. Shorthorns are



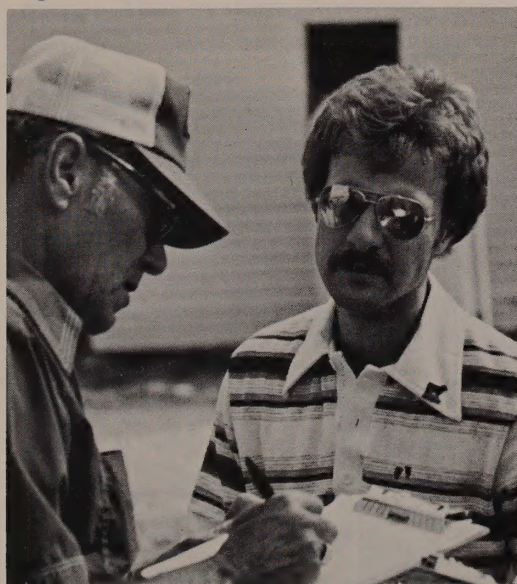
# WHERE DO I START?

Getting off on the right foot is probably the most important step in starting any project. Selecting the right type of steer or heifer for a beef project will determine your degree of success.

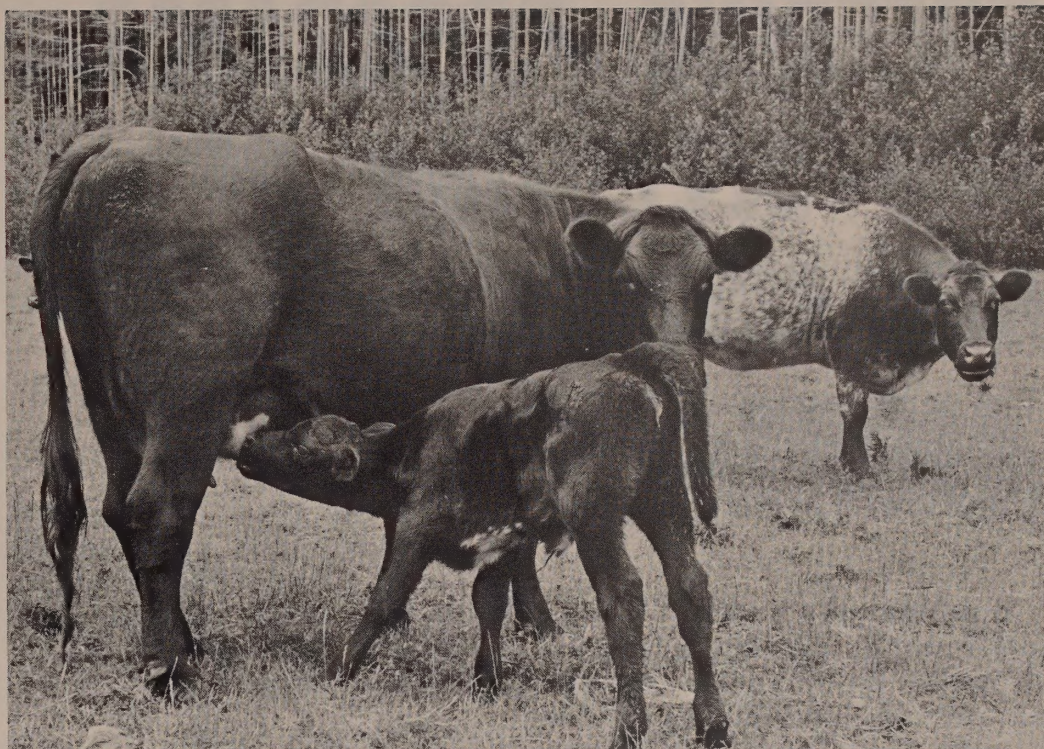
Select a purebred calf for your 4-H or FFA project. The general appearance of your calf should show straightness of lines from front to rear—with uniformity of width and depth.

The legs should be set squarely under each corner. Trimness of middle and brisket is important because of the waste that occurs in these areas at time of slaughter. However, keep in mind that the calf does need to have the capacity to consume grain and roughage to be an efficient gainer. The high priced cuts of meat are taken from the rear quarters of the animal so look for a long, wide and level rump that also shows depth of rear quarter.

Breed character and quality are also important in predicting the doing ability of a calf.



Alan Sears, Director of Youth Activities for the American Shorthorn Association, works with young cattlemen throughout the country. He may be contacted through the Omaha office.



## HEIFERS... THE FOUNDATION OF YOUR HERD

### ARTIFICIAL INSEMINATION — A HELPFUL TOOL FOR JUNIOR MEMBERS

The use of A. I. can be helpful to you as a junior member starting your herd. It can offer you the use of some of the best bulls and when you have only a few cows, you should breed them to the best bulls available. The American Shorthorn Association grants special privileges to these junior members by allowing them this opportunity at no additional regular charge.

The heifer project is designed for 4-H and FFA club members interested in beef cattle production and management. When entering into beef heifer project you should keep in mind what you will need for facilities when your project has grown to herd size.

### SELECTING THE HEIFER . . .

The female should be of modern type, showing meatiness and natural muscling. The heifer should display breed character and femininity and show evidence of being thrifty. Also plenty of weight-for-age is important. Do not

buy someone's culls or inferior heifers that are off marked. Be sure to check the quality of the sire and dam. A good bit of insurance would be to investigate several Shorthorn herds and select a heifer that meets your specification and pocket book. A rule of thumb on cost is "you pay for what you get." In starting your project buy a good one.

### CARING FOR THE HEIFER PROJECT . . .

If you plan to show your heifer you will need to have a higher degree of finish on her; however, when growing the heifer for breeding purposes only and you don't plan to show, the corn and other high concentrates should be held to a minimum. More roughage should be included in the diet.

### BREEDING PRACTICES . . .

The improvement of your Shorthorn herd through the various methods of mating and selection is very interesting, and you will want to do considerable studying of animal breeding practices. Remember a good Shorthorn bull is the most important part of your herd.



# BREEDING PROGRAMS AND SELECTION OF REPLACEMENT ANIMALS

Improvement is probably the one goal sought by all livestock breeders. As young Shorthorn breeders you too will be interested in ways to improve your cattle. You will be interested in first selecting the best individuals, and then mating them to increase their influence on your herd. There are many selection and breeding programs in use today, and those discussed here are not necessarily the best, but have met with good success in the past.

Hopefully, your selection of individuals will be based on traits which are economically important. Some of these are as follows:

## REPRODUCTIVE PERFORMANCE...

Some factors which are involved here are calving troubles, hard breeders, long calving intervals (over twelve months), etc. Selecting heavily against these faults is not advised by most experts since such things as disease, nutrition, and management can greatly improve these problems.

## LONGEVITY...

It seems wise to attempt to increase the productive life span of the cows in your herd for several reasons. The longer your cows live, the fewer replacements you will need. This allows you to more rigidly cull your annual heifer crop, and thus, to retain only superior individuals. Also, the fewer young immature females in your herd, the less feed and maintenance cost for heifers that are not yet paying for their bill.

## MOTHERING ABILITY...

Weaning weight of calves has been shown to be a good way to evaluate mothering ability. This is a trait which adds pounds onto calves and is passed onto offspring, and therefore, is a good trait to select for.

## RATE OF GAIN...

If all other factors are held equal, feed lot gain should be increased as much as possible. Cattlemen can turn over more cattle per year and/or at higher weights with faster gains. With the recent trend to larger cattle, cattle feeders are realizing that rate of gain cannot always be an end in itself. Some (not all) of these fast gaining cattle are late in maturing and fail to reach the choice grade at acceptable carcass weights (550-700 pounds).

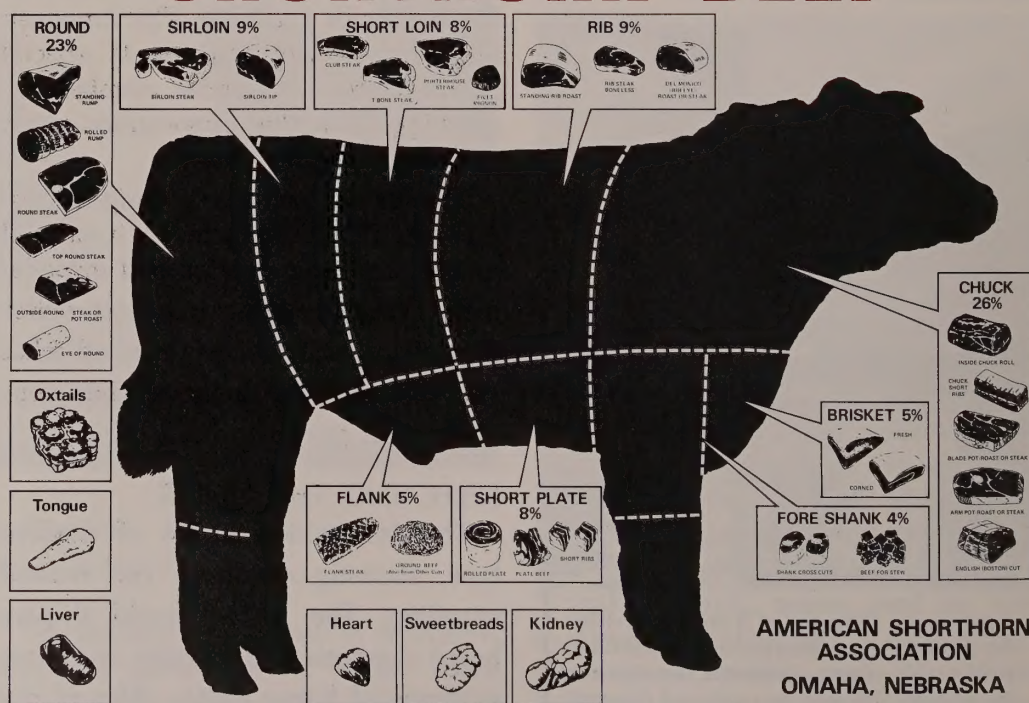
## FEED CONVERSION...

This is very essential since a cattleman is really selling his feed through his cattle, and the smaller the amount of feed per pound of gain, the higher return he is getting on his feed. In many cases, faster gaining cattle will be more efficient, but differences also exist between those with similar gain records. As we become more particular in our selection, feed conversion will probably play a stronger part in breeding programs.

## CARCASS MERIT...

Carcass traits which influence price are carcass grade and cutability. Cutability refers to the percent of the carcass that can be converted into retail cuts of meat. Size of loin eye, amount of fat thickness, the percent of internal body cavity fat, carcass weight and shape of the carcass are all factors which help to predict cutability. Carcass grade indicates the quality of the meat. Marbling, texture, and color of the lean, and conformation are the factors involved in determining grade. Carcass traits are generally highly heritable and certainly play an important economic role. The breeder must keep in mind that both quality and

## TRIM-MODERN-FLAVORFUL SHORTHORN BEEF



AMERICAN SHORTHORN  
ASSOCIATION  
OMAHA, NEBRASKA

Location of high priced cuts indicate where emphasis should be placed when selecting.



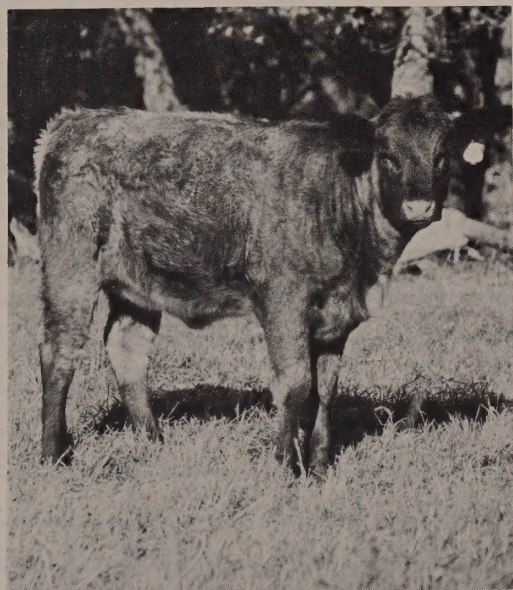
quantity are important concepts. We cannot sacrifice quality in the attempt to get lean carcasses if beef is to retain its rank as number one in preference of the American housewife.

#### MISCELLANEOUS TRAITS...

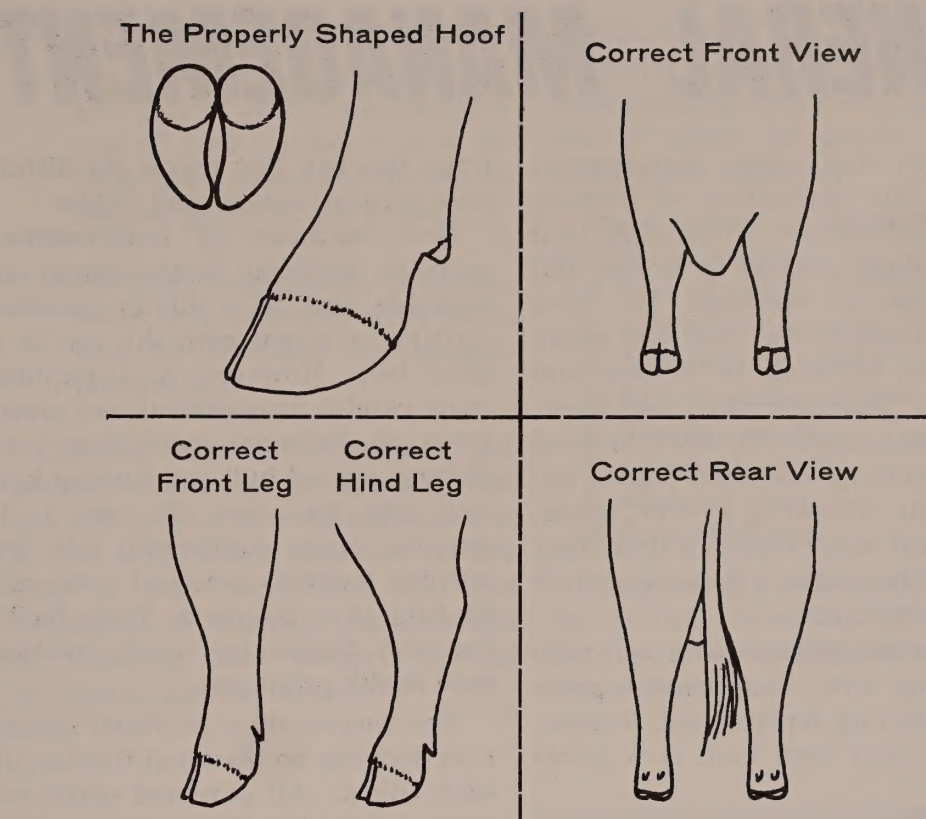
There are a host of other traits which affect the value of the animals we raise. Some of these are: 1. Disposition; 2. Soundness of feet and legs; 3. Shape of udder and teat size; 4. Cancer eye susceptibility; 5. Dwarfism, etc. Let us say here that you, as a young Shorthorn breeder, have the good fortune of being associated with a breed of cattle that is free from problems in almost all of these areas.

Once you have clear in your mind which of these traits are most important to your program you will probably want to devise a breeding program which will serve to make the fastest and most lasting improvement. Because of the long generation interval we are dealing with, time is an important factor.

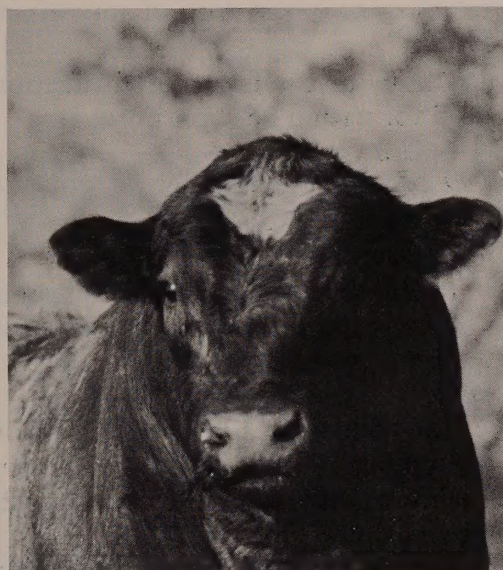
Probably the quickest way to increase any one trait is to select for it alone. For instance, to make the most progress in mothering ability you would select simply on the 205 day adjusted weaning weight. This has obvious advantages in some herds that are seriously lacking in one trait and allows for its rapid improvement. This system, however, is not generally recommended since one



Note the femininity of this fine Shorthorn female.



**FEET AND LEGS ARE IMPORTANT.** The feet on your calf need occasional attention. Keep the toes trimmed short so the calf walks flat on his hoof. A hoof-trimming table or a stock should be used so that the foot can be trimmed off the bottom.



This Polled bull denotes strength and prominence of poll. Polled Shorthorns carry a dominant characteristic producing hornless calves.

may lose sight of other important traits such as feet and legs, etc.

Another method is to establish minimum culling levels, thereby selecting simultaneously and independently for each trait. For instance, the breeder may decide to cull animals with a weaning weight less than 400 pounds and that gain less than 1.5 lb./day on feeding trial and that require more than 9 lbs. of feed/lb. of gain, and that have lower conformation than one wishes to retain. The weakness here exists in that an

individual may be culled because of one trait, but otherwise may be close to ideal.

A third method for selection is the index. These combine all important traits into one overall value. Of the three, this is theoretically the best system. Selection indexes are not perfect. They sometimes do not allow for year to year differences which may confuse genetic change with environmental change. We should keep in mind that we are really using indexes all the time in our judgement of cattle; that is, we are always combining traits in our evaluation. A well designed selection can be very helpful in guiding your choices, however it should be supplemented with careful eyeball observation to avoid serious faults which the paper and pencil cannot describe.

Successful animal breeders have been those who have concentrated on economically important traits which are heritable. They have also been those who have struck the delicate balance in selection between only one trait and too many traits (spreading selection too thin). Also, they have almost invariably possessed the "master's eye" in sound judgement.



# GENERAL MANAGEMENT

Modern day cattle management involves the application of Science, Genetics, Nutrition, Physiology, and Microbiology. Always be honest and responsible in dealings. Be open minded toward new ideas and methods. Also, be aware of modern and approved practices—then use them.

For maximum efficiency in your beef operation, maintain a good environment. Providing shelter, shade, and a good water supply is important so that the cattle will remain quiet and free from stress.

Be a conscientious livestock man in dealing with management problems, selecting replacement females, or your next herd bull. It is some-

times this key that makes the difference between success and failure.

New methods of improvement such as artificial insemination are available and to a Junior member starting up a new herd this can be a great help. However, A. I. requires more careful management and sometimes can be more costly than purchasing a good bull and turning him out with the cows. To use A. I. requires more equipment; yet, by keeping facilities practical costs can be held to a minimum. These facilities also double for use in treating herd health problems.

The success of a purebred operation depends on the identification of each animal. All purebred cattle require a tattoo in the ear for registry purposes. Tattooing should be done when the calf is young and before weaning to avoid loss of identification.

Other methods of identification used for within herd purposes are:

1. Horn brand
2. Metal and plastic ear tags
3. Neck chains
4. Branding (freeze and hot)

Remember proper identification is not only important for registry, but to keep within-herd efficiency records.

The following items are points for the young cattleman to become acquainted with to better accomplish his goals.

1. A feeder must be able to plan a feed ration and feeding schedule for different ages and sexes of beef cattle.

2. It is important to know the basic fundamentals of animal health and learn to detect disease indications at an early stage.

3. Remember to use preventive practices and this will eliminate future problems with regard to health.

4. Recognize a cow in heat.

5. Learn to give assistance to a cow at calving only if necessary.

6. Learn the proper way to register a purebred animal, if this is your project, and take an active part in your Purebred Association.



INSTRUCTIONS FOR  
FIELD SHEET USE  
ON BACK OF PAGE 3

BREEDER			
Bryon Adams			
WEANING DATE	DATE ON TEST		
11-18-75	11-18-75		
FIELDMANS NOTE:			
		CALF	
PAST. UNIT	FEED UNIT	SEX	TATTOO
			BIRTH
		B	E34 5 9 75
		B	E51 4 28 75
		B	E74 5 19 75
		B	E80 5 3 75
		B	E95 5 21 75
		B	E102 5 22 75
		B	E103 5 22 75
		B	E111 5 14 75
		B	E11 4 12 75
		B	E55 4 27 75
		B	E69 4 28 75
		B	E78 5 3 75
		B	E86 5 6 75
		B	E15 4 15 75
		B	E43 4 16 75
		B	E48 4 11 75
		B	E63 4 23 75
		B	E65 5 13 75
		B	E66 4 29 75
		B	E68 5 2 75

B—Bulls H—Heifers S—Steers

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# THE IMPORTANCE OF GOOD RECORDS

As you may have already noted, if you wish to be a good manager, you must also be a good record keeper. Cost records and production records are your profit indicators so we must rank them top priority.

## PROJECT EXPENSE RECORDS...

A. Feed—Detailed records listing amounts of feed consumed and cost of feed consumed must be kept and totaled for the entire feeding period of the project.

B. Housing, equipment, interest, taxes, and veterinary work must also be recorded for project information.

At the end of the project, net profits or loss can be figured. With the 4-H project in mind sometimes it is not always the total net dollars that is most important, but the education of learning the processes of handling beef projects should be labeled very important.

## PRODUCTION RECORDS...

Production records are referred to when dealing with breeding stock as this is where all genetic improvements must originate.

Some factors to consider for production records are:

- A. Ease of calving
- B. Calf weight at birth
- C. 205 weaning weight
- D. Milking ability of cow
- E. Yearling weight
- F. 18-month weight
- G. Muscling score
- H. Feed efficiency

Many more points could probably be written into this list as you become more proficient with your record keeping.

### R.O.P. FIELD SHEET Records of Performance AMERICAN SHORTHORN ASSOCIATION

8288 HASCALL STREET  
OMAHA, NEBRASKA 68124  
PHONE: (402) 393-7200

CODE NO.	ADDRESS (City, State, Zip) Shorthorn, Nebraska 58022	PHONE 619-699-4700	Date Weighed For Weaning Wt. 11-18-75																																																																																																																																																																								
FINAL DATE 5-15-76	COMMERCIAL REGISTERED <input checked="" type="checkbox"/>	CHECK ONE CREEP FED <input type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>																																																																																																																																																																								
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**HERD  
PERFORMANCE  
RECORDS  
ARE KEPT  
ON THIS  
SHEET.  
FORMS  
AND  
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ARE  
PROCESSED  
BY THE  
AMERICAN  
SHORTHORN  
ASSOCIATION  
AT THE  
COST OF  
25¢  
PER HEAD**



# THE CARCASS TELLS THE STORY

The end product of BEEF is meat on the table. It is possible to breed for better muscling in cattle through careful selection. The main point of concern is to breed better beef carcasses without losing efficiency in production and feed consumption.

The following are some cattle evaluation terms you should be acquainted with:

## DRESSING PERCENT

**Definition:**

(Chilled carcass weight  $\div$  live weight) x 100

**Extreme Range:**

38-70%

**Normal Range:**

53-67% for Choice steers and heifers

**Average:**

60% for Choice steers and heifers

**Relationship Between Grade and Dressing Percent:**

Grade	Range	Average
Prime	60-68%	63%
Choice	57-64%	60%
Good	56-60%	58%
Standard	53-59%	56%
Commercial*	52-54%	53%
Utility*	47-55%	51%
Cutter*	43-52%	47%
Canner*	38-46%	43%

\*Composed almost entirely of cows.

As indicated, dressing percent varies greatly with the grade, type, and condition of the cattle being evaluated. For example, an extremely thin, old dairy cow may dress below 45%, whereas an extremely fat yearling steer may dress over 65%. The three specific factors that have the greatest influence upon dress are: 1) the amount of fill in the animal, which will lower his dress; 2) degree of finish, which will increase dress; and 3) weight of the hide, which will lower it.

As industry continues its trend toward meatier cattle, dressing percent will likely play a less important

role in cattle evaluation than it has in the past. Within a particular quality grade (Prime, Choice, etc.), it is actually inversely related to carcass value because fatter cattle dress higher than leaner cattle.

## FAT THICKNESS

**Definition:**

Depth of fat in inches over the rib eye muscle at the 12th rib. Consists of one measurement taken at a point  $\frac{3}{4}$  of the distance from the chine end of the rib eye muscle.

**Extreme Range:**

0.1-2.0 inches

**Normal Range:**

0.25-1.25 for steers and heifers

Fat thickness measured over the 12th rib has been a controversial issue. The most desired amount would measure around .3.

## RIB EYE AREA

**Definition:**

Area of the *longissimus dorsi* muscle measured at the 12th rib

**Extreme Range:**

7.0-19.5 square inches

**Normal Range:**

8.0-15.0 square inches

**Average:**

10.75 for 1000 lb steers

A reasonably good standard for rib eye area in cattle would be 2.0 square inches per hundred pounds of carcass weight. For a 1000 lb steer dressing 60%, this would mean 12 square inches. In practice, this standard is probably too difficult for heavy cattle and too lenient for lightweight cattle.

It is unfortunate that rib eye area is rather poorly correlated with total carcass lean. In spite of this serious drawback, rib eye area is widely used as an indicator of beef carcass muscling because it can be accurately measured with relative ease once the carcass has been quartered at the 12th rib.

## PERCENT INTERNAL FAT

**Definition:**

This consists of the total fat that can be trimmed from the kidney, pelvic, and heart areas of the carcass, expressed as a percent of carcass weight.

**Extreme Range:**

1.0-8.0%

**Normal Range:**

2.0-6.0%

**Average:**

3.5% for Choice grade cattle

Percent internal fat is one of the criteria that is used to estimate "cutability", as discussed below.

## CUTABILITY

**Definition:**

"Cutability" is the percent of carcass weight in boneless, closely trimmed retail cuts from the round, loin, rib, and chuck. It is very similar to lean cut percentage in swine except for the fact that the latter is not expressed on a boneless basis.

**Extreme Range:**

40-56%

**Normal Range:**

43-53%

**Average:**

48% on 1000 lb Choice steers

Fat exerts a much greater influence upon cutability than does muscling. In other words, a thin, light-muscled steer could have a higher cutability than a fat, heavily-muscled steer. Moreover, it is virtually impossible for an over-finished steer to have high cutability regardless of how muscular he might be.

## YIELD GRADE

A "yield grade" is simply a numerical score applied to a beef carcass, based upon its estimated cutability. The normal range of cutability is arbitrarily broken down into five yield grades: 1 through 5.

To obtain the actual cutability of a beef carcass it is, of course, necessary to completely trim and bone out the four primal cuts. It goes without saying that this is a very time-consuming and expensive task. However, it is possible to estimate cutability or yield grade by plugging



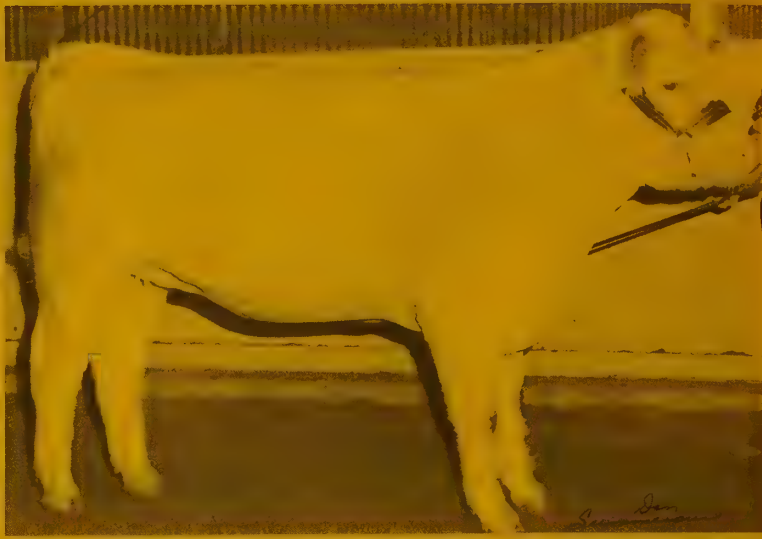


***TRY YOUR JUDGING SKILLS  
ON THIS YEARLING  
HEIFER CLASS***





1



2

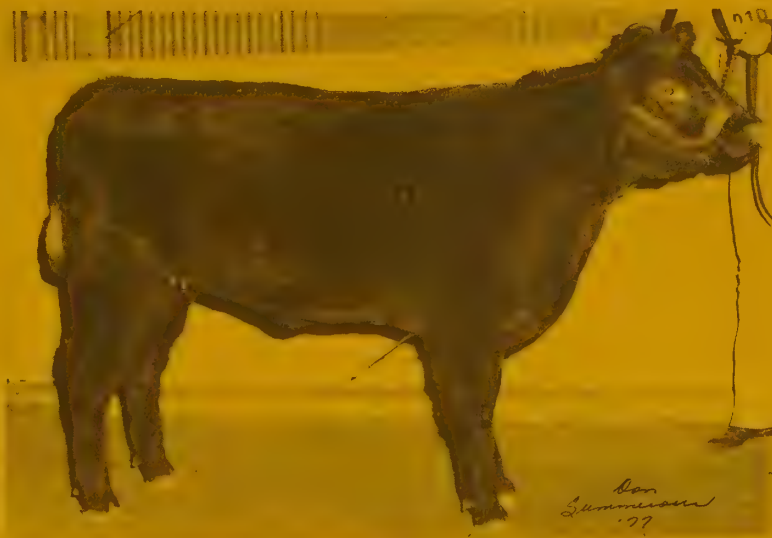






3

Don  
Lammerson  
'77



4

Don  
Lammerson  
'77



Don  
Lammerson  
'77



Don  
Lammerson  
'77



Don  
Lammerson  
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# ***Heifer Class Reasons***

This class divides itself an easy top, an easy bottom and a close middle pair.

The white heifer shows alot of size, scale. She is very correct in her features and has alot of natural muscling. The heifer is also very feminine and is any easy top in this class.

We placed 4 over 1 in a close decision. The number 4 heifer more closely resembles the no. 2 heifer in her muscle development. She is a little larger in the skelton structure and shows more correctness and balance as the no. 1 heifer.

The number one heifer is very feminine and will probably make a good brood cow however in this class we would like to see her larger, stand a little wider in back and show more expression of muscling.

We felt the no. 3 heifer was an easy bottom she lacks size, muscling, and probably the most important trait she lacks is correctness. We would like to see this heifer larger, more natural muscling and longer from her hooks to her pins.

The cuts for this class are 4-2-3.



the following factors into a regression equation: 1) fat thickness; 2) percent kidney, pelvic, and heart fat; 3) hot carcass weight; and 4) ribeye area. These factors may be either estimated or actually measured on the carcass. Qualified government graders are trained to "eyeball" a carcass and estimate its yield grade without actually taking any measurements; through experience, they are able to attain a fairly high degree of accuracy. An inexperienced person should start out by estimating each of the four factors and then put them into the following equation:

$$\begin{aligned} \text{Yield Grade} &= 2.50 \\ &+ (2.50 \times \text{adjusted fat thickness, inches}) \\ &+ (0.20 \times \text{percent kidney, pelvic, and heart fat}) \\ &+ (0.0038 \times \text{hot carcass weight, pounds}) \\ &- (0.32 \times \text{rib eye area, square inches}) \end{aligned}$$

Using this equation, one may compute yield grade to the nearest 0.1 of a grade. In actual practice, however, professional graders estimate only to the nearest whole grade. The following table gives the range in percent cutability covered by each of the five yield grades.

Yield Grade	Cutability (%)
1.0 - 1.9	54.6 - 52.6
2.0 - 2.9	52.3 - 50.3
3.0 - 3.9	50.0 - 48.0
4.0 - 4.9	47.7 - 45.7
5.0 - 5.9	45.4 - 43.3

Referring back to the equation, take note of the degree to which each factor influences final yield grade:

- ± 0.1 inches external fat changes yield grade by 0.25 of a grade
- ± 1.0% internal fat changes yield grade by 0.20 of a grade
- ± 100 lbs carcass weight changes yield grade by 0.38 of a grade
- ± 1.0 square inches rib eye changes yield grade by 0.32 of a grade

From this, one can appreciate how dramatically the yield grade of a beef carcass can be altered by a few tenths of an inch of external finish. On the other hand, a few tenths of a square inch of rib eye does not have a marked effect.

Following are a few examples that are presented to help illustrate how yield grade works:

#### EXAMPLE No. 1

(Typical Choice Grade Steer)

1000 lb. live weight; yields 60% (600 lb. carcass); 0.75 inch external fat thickness; 3.5% internal fat; 10.75 square inches rib eye.

$$2.5 + 2.5 (.75) + .2 (3.5) + .0038 (600) - .32 (10.75) =$$

$$2.5 + 1.88 + .70 + 2.28 - 3.44 =$$

3.9 yield grade

#### EXAMPLE No. 2

(Fairly lean, Muscular Steer)

1000 lb. live weight; yields 60% (600 lb. carcass); 0.6 inch external fat thickness; 2.5% internal fat; 12 square inches ribeye

$$2.5 + 2.5 (.6) + .2 (2.5) + .0038 (600) - .32 (12) =$$

$$2.5 + 1.5 + .50 + 2.28 - 3.84 = 2.9$$

yield grade

#### EXAMPLE No. 3

(Extremely Lean Steer)

Same steer as in Example No. 2, except 0.3 inch fat and 2.0% internal fat

$$\text{Yield grade} = 2.0$$

#### EXAMPLE No. 4

(Fat, Light-Muscle Steer)

1000 lb. live weight; yields 63% (630 lb. carcass); 1.0 inch external fat; 4.5% internal fat; 9.0 inch rib eye

$$2.5 + 2.5 (1.0) + .2 (4.5) + .0038 (630) - .32 (9) =$$

$$2.5 + 2.5 + .90 + 2.39 - 2.88 = 5.4$$

yield grade





# FEEDING AND NUTRITION

Animal scientists, through research, have developed feeding standards which list the nutritional requirements for your calf. Your Shorthorn requires a balanced ration containing adequate vitamins, energy, protein, and minerals to achieve maximum growth. Remember that the goal in feeding is to get the desired performance at the least cost. Also, select your feed to fit your situation. Plan to feed the calf to finish for your special show. To further explain this . . . if your show is in August, you need to feed the calf to be finished at that time.

Your animal should receive fresh water, salt, and a high roughage ration for a few days before the beginning of the feeding period.

There is some advantage in feeding two or more calves together since competition between the calves for feed increases feed consumption.

Commercially prepared feeds are available. It is important that these feed preparations meet the required levels of protein, energy, mineral, vitamin, and antibiotics for your calf. Costs of these rations should be compared to the costs of the rations mentioned later in this section.

You may either hand-feed or self-feed your animals. If you use the hand-feeding method, you will place feed in a feed box for your calf two or three times per day. They should not be fed more feed than they will clean up in 30 to 40 minutes. If you choose to self-feed, however, you will mix a feed ration that is placed in a large feeder containing several days' supply of feed. With this feeding method, your animals have access to feed continuously.

There are advantages and disadvantages to each of these methods of feeding. Experienced cattle feeders obtain good results by either self-feeding or hand-feeding. However,

the inexperienced feeders may be more successful with the self-feeding method because: 1. the calf is less likely to go "off feed", 2. the calf will receive sufficient feed, but not an excess amount as may be the case with hand-feeding; 3. the calf will usually have larger daily gains with self-feeding.

Self-feeding is probably the desired method, if you cannot closely follow these important points in handfeeding:

1. feed your calf at regular hours,
2. remove stale feed and feed only a fresh grain mixture
3. feed the correct amount of hay. If you feed too much hay, it will decrease the amount of grain the calf will eat, thereby reducing his rate of gain.

When using the self-feeding method, start with a ration that contains approximately 60 per cent roughage and 40 per cent grain mixture. Gradually reduce the roughage until the ration contains 20 to 30 per cent roughage and 70-80 per cent grain mixture.

When silage is used as the source of roughage, you should remember that silage contains a variable amount of moisture. Therefore, a much higher percentage of silage by weight would be fed in a ration than hay, which contains only 10 percent or so of water.

There are certain chemicals that will increase the rate of gain of your animal. These are called "feed additives." One of these feed additives is stilbestrol. This compound will increase the rate of gain of your calf by seven to eleven per cent. It will also decrease the amount of feed required per pound of gain. You may place a stilbestrol pellet containing 24 milligrams under the skin of the ear of your calf. This is called "implanting." This is done with special

equipment, and you should contact your 4-H agent or FFA instructor for assistance. Stilbestrol should *not* be included in the feed if the calf has been implanted. An excess amount may have undesirable side effects on your calf. Also, breeding animals should not be fed this additive. Another feed additive that may be included in your ration is antibiotics. They are used to prevent live abscesses and stimulate growth. The calf should receive 75 to 80 milligrams of antibiotics per day in the ration.

When preparing the feed, corn, grain sorghums (milo), barley, and oats should be medium ground or rolled. Grinding roughage is not recommended except in preparing a ration for self-feeding. The ration should be thoroughly mixed so that feed additives, as well as salt and other minerals, will be evenly distributed throughout the feed.

Some precautions in feeding are:

1. Always provide cattle with clean, fresh water, and a salt-mineral mixture (two parts salt and one part steamed bonemeal or dicalcium phosphate).
2. Observe cattle regularly for digestive disturbances, bloat, founder, coccidiosis, and urinary calculi.
3. Isolate sick animals and consult a veterinarian concerning diagnosis and treatment of the disease or ailment.
4. Gradually increase the percentage of grain in the ration over a three to four week period. Founder may result if the grain is increased too rapidly.
5. Dusty or moldy feeds should not be used.
6. If used, wheat may replace and should not exceed fifty per cent of the grain mixture.
7. Use only high quality roughages.
8. All ration changes should be made gradually and carefully.
9. Always feed some roughage with pelleted or ground rations.
10. Provide nine to twelve inches of feeder space per animal for self-feeding and twenty to thirty inches feeder space for hand-feeding.



# A GUIDELINE FOR BEEF FEEDING PROGRAMS

BREED AND SEX	BEGINNING WTS. (lbs.)	GROWING PHASE		FINISHING PHASE		SHOW WT SEPT. 1 (lbs.)
		NUMBER DAYS	DAILY GAIN (lbs.)	NUMBER DAYS	DAILY GAIN (lbs.)	
Shorthorn Steers	450-500	170-180	1.5	120-130	2.5	1020-1080
Shorthorn Crossbred Steers	450-500	160-170	1.6	130-140	2.8	1085-1150
Shorthorn Heifers	420-470	190-210	1.3	90-110	2.3	900-970
Shorthorn Crossbred Heifers	420-470	180-190	1.4	110-120	2.6	960-1020

## HOW TO USE THE ABOVE GUIDELINE\*

1. Select the feeding program from the guide that corresponds to your project.
2. Note the number of days the feeding program indicates your calf is to be fed a finishing ration. This is important.
3. Look at a calendar and mark the date you intend to sell your calf or take it to the fair. Now count back on the calendar the number of days the guide tells you to feed a finishing ration. Mark this date on the calendar. You should begin feeding your calf a finishing ration on this date.
4. The number of days the calf should be fed a growing ration depends when you get him. Feed your calf a growing ration from the time you get him until the day you mark on your calendar to switch to a finishing ration.
5. The feeding program you select will be for a calf with an average gaining ability. An adjustment in the feeding program will be necessary if your calf is below or above average for the breed.
6. To determine a calf's gaining ability, weigh it after it has been on a growing ration for two weeks and again about three months later. Compare the average daily gain during this period with the expected daily gain during this period with the expected daily gain listed.
7. Adjust the feeding program in this manner:
  - (a) Lengthen the finishing phase ten (10) days for each one-



tenth pound per day the calf falls below the average given in the guide.

- (b) Shorten the finishing phase five (5) days for each one-tenth pound per day the calf gains above the average given in the guide.

8. Only two rations are necessary—one for the growing phase and another for the finishing phase. The differences in the feeding programs for calves of different breeds and sexes is not the kind of ration fed, but is the variation in the length of the two feeding phases.

## SUGGESTED GROWING RATIONS

The following are a variety of suitable growing rations. Choose a ration which best fits your home situation:

### Ration 1 . . .

Corn silage—free choice  
40 percent protein supplement—  
1½ pounds

### Ration 2 . . .

Sorghum silage—free choice  
40 percent protein supplement—  
1½ pounds

Rolled corn or milo—2 pounds

### Ration 3 . . .

Alfalfa silage—free choice  
Rolled corn or milo—4 pounds

### Ration 4 . . .

Alfalfa hay—free choice  
Rolled corn or milo—4 pounds

### Ration 5 . . .

Early cut prairie hay—free choice  
40 percent protein supplement—  
1½ pounds

Rolled corn or milo—4 pounds

### Ration 6 . . .

Early cut brome grass hay—free  
choice

40 percent protein supplement—  
1½ pounds

Rolled corn or milo—4 pounds

Each calf should receive supplemental Vitamin A while on a growing ration. It may be included in a protein supplement or mixed and fed with grain. A reminder—the calf should have access to salt, a mineral mixture and clean water at all times.

If the protein supplement being used contains less than 40 percent protein, substitute one of the following:

30 percent protein supplement—  
two pounds per day

32 percent protein supplement  
—two pounds per day

35 percent protein supplement—  
1¾ pounds per day

\*This material provided by Dave Williams, University of Nebraska Extension Service.

## SUGGESTED FINISHING RATIONS

These rations may be fed as a complete ration for either hand-feeding or self-feeding. Additional roughage should not be fed except when starting the calf on feed or if you desire to reduce the rate of gain . . .

### RATION No. 1

*Corn . . . . .	70.00%
Alfalfa (17% protein) . . . . .	5.00%
Soybean Oil Meal . . . . .	7.00%
Molasses . . . . .	3.00%
Cottonseed Hulls . . . . .	14.00%
Minerals . . . . .	.50%
Salt . . . . .	.50%
Antibiotics (aureomycin 10 1 lb. per ton)	

\*\*Stilbestrol

(10 mg. per head  
per day)

\*\*\*

100.00%



### RATION No. 2

*Corn .....	42.00%
DeHy Alfalfa (17% protein)	
	7.00%
Soybean Oil Meal ....	6.00%
Silage .....	40.95%
Molasses .....	3.00%
Minerals .....	.30%
Salt .....	.50%
Antibiotics (1 lb. per ton)	.25%
**Stilbestrol (10 mg. per head per day)	
***	
	100.00%

### RATION No. 3

*Corn .....	76.00%
Alfalfa Hay (high quality)	
	20.50%
Molasses .....	3.00%
Salt .....	.50%
Antibiotics (aureomycin 10 lb. per ton)	
**Stilbestrol (10 mg. per head per day)	
***	
	100.00%

\* All or any of the corn in these rations may be replaced by milo or barley.

\*\* IMPORTANT: Stilbestrol may be omitted from the ration, and must be if the animals are kept for breeding purposes.

Also, Stilbestrol must be removed from the feed at least 48 hours before slaughter.

\*\*\* One pound trace minerals should be added to one ton of complete feed for each of these rations.

To help you with your rations, the following are weights and measures for some common feeds:

#### Pounds Per Level Gallon

Barley, rolled .....	4.4
Corn, shelled .....	6.8
Corn, ground .....	6.0
Corn-and-cob-meal .....	5.6
Cottonseed meal .....	6.0
Linseed meal .....	4.4
Oats, whole .....	4.0
Oats, rolled .....	2.8
Soybean meal .....	6.8
Wheat bran .....	2.0
Molasses, blackstrap .....	12.0

# HEALTH CARE FOR YOUR HERD & PROJECT

I. Management is one of the most important elements in the safe guarding of your cattle's health.

#### A. Sanitation:

1. Cattle should be supplied with a clean, dry place to lie down.
2. Fly control should be practiced, (spraying, backrubs, dust bags, etc.).

B. Cattle should be supplied with the proper balance of essential nutrients.

1. Salt, minerals, protein, and energy, supplied from carbohydrates, should be kept in proper balance to assure the health of cattle. Deficiency in any of these areas lowers the resistance of cattle and sickness can easily set in.
2. Since water is one of the most important nutrients, it is important that the quantity and the quality of water is sufficient.
  - a. When you have over one per cent solids in water, it

will effect the consumption.

- b. Nitrates can effect water consumption (40-50 gm nitrate/100 lbs. of body weight is toxic)
- c. For best consumption the temperature of water should be kept between 33° F. - 70° F.
- d. The normal consumption of water is 1 - 1½ gal./100 lbs. body weight/day.

II. When buying weaning age calves and yearling feeders, you should check for:

- A. Are the calves vaccinated? If so, what for?
- B. Have they been started on grain?
- C. How long have they been weaned?
  1. During the stress period after buying or weaning calves,
    - a. They should be kept quiet so they will be able to rest and get adjusted to the new surroundings.
    - b. They should be fed mostly





hay (grass hay if available) during the first few days.

- c. They can be started on a more high energy ration after the first few days. However, this should be only a maintenance ration until the calves are over any possible sickness or excess strain.

2. To avoid future health problems, precondition calves as follows:

- a. Preconditioning should in most cases take from 1-2 months. This would keep from putting too much stress on the calves.
- b. Depending on the purpose for which the calves will be used, they should be castrated and dehorned.
- c. If recommended by a veterinarian, the calves should be vaccinated for the following:
  - 1. IBR-red nose
  - 2. BVD-virus diarrhea
  - 3. Lepto
  - 4. Para-influenza
  - 5. Blackleg
  - 6. Malignant edema

III. If not done previously or if the period of effectiveness of the vaccine has expired, certain things that cattle at breeding age should be vaccinated for are:

- A. Blackleg
- B. Brucellosis
- C. Leptospirosis
- D. Vibriosis

IV. Practices that should be followed for all ages of cattle

- A. Check cattle for grubs, flies, lice, ticks, and worms.

1. Grubs:

Are the adult stage of the heel fly or bomb fly. Calves normally are infested with greater numbers of grubs than older cattle. Cattle, especially calves in areas where grub numbers per animal are known to be high, should be treated as soon as possible after the adult heel fly season is over. But they should not be treated later than 8-12 weeks before the anticipated

first appearance of grubs in the backs.

Treat the calf for grubs with a systemic insecticide such as Co-ral or Ruelene. These "grub killing" insecticides are called "systemics" because they are carried within calf's body or system and kill the grubs there. Read and follow the directions on the label as to the required elapsed time between treatment date and slaughter date.

2. Flies, Lice & Ticks

Treatment for these external parasites should be done with a recommended insecticide such as toxaphene. The insecticide may be applied as a spray or a dust. Spraying or dipping should be thorough and usually two treatments 14 days apart will eradicate the parasites. Effective spraying requires sufficient gallonage per head to soak the hair to the skin.

3. Worms

Checking for and worming cattle should be a common practice in most areas.

- a. Young animals are most often affected. Some signs of infection are progressive loss of weight, weakness, and/or rough hair coats.
- b. To be sure of the serious-

ness of the infection and the type of worms infecting the cattle, fecal samples should be run.

- c. Within two weeks of arrival, treat the calf for these internal parasites with thiabendazole, phenothiazine, or other approved wormers. They can be treated by boluses, granules (to be put on the feed), or drenching. Follow manufacturers directions for the product used.

- d. In most cases it is most effective to worm cattle with repeated treatments at two to three week intervals.

B. Common practices to help control eye infection in cattle are:

- 1. Fly control (flies cause eye irritation and lead to infection).
- 2. Keep cattle out of areas where certain grasses, weeds, or brush may cause irritation to the eyes.
- 3. Make sure that the cattle are not deficient in Vitamin A.

V. Treatment of diseases in cattle varies with the locality.

- A. The most important aspect in treating cattle is early diagnosis.
- B. It is advisable to contact your veterinarian, if you are uncertain about diagnosis.



External parasites can be controlled with semi-annual spraying. High pressure and a thorough soaking will make for healthy cattle.



# PREPARING A STEER FOR THE SHOWRING



A place to display quality of project along with ability of the individual is the showing.

When preparing a market steer for the showing it starts way before the week of the show. After purchasing a calf to show the following summer and fall, there are many things that need to be done shortly after his arrival. The steer should be started on a feed and slowly increase the amount of feed the steer consumes. Make sure that you don't feed him too much at the start. Before the steer reaches a size where you can't control him, you should break him to stand and lead with a halter. Also, at this time it would be good to get him used to and respond to a show stick.

Considering the steer has been brought along properly approximately one to two months before the show, the following steps should be taken:

The steer should be brought into the barn to be kept cool. The use of fans and a light mist of water will help to stimulate the growth of hair. By using a disinfectant such as dip, iodine mixed with water or vinegar mixed with water you can keep the hair clean. You can use a hair blower to keep the hide clean of dirt. Keeping the hair and hide clean is a very important step in having a good coat of hair.



## CLIPPING

On a steer with an average tail and reasonably deep twist, start clipping on the tail approximately at a point parallel to the bottom of the twist or just where the split occurs between the hind legs. On a heifer or a bull the clipping should be done to enhance the individual's good characteristics and to cover up her or his bad ones. Remember always to try to make the animal as natural looking as possible.



Once you have started the hair growing it is important to train it properly. The best way is by using elbow grease and plenty of brushing. Wet the steer completely and brush all hair up on the sides and straight ahead on the back. It is important that you brush until dry to keep the hair from becoming curly.

About four weeks before the show, the feet should be trimmed correctly and fairly short so that you will not have to repeat this process.

Within a week to ten days before the show you should start clipping. Trim the head, tail, and underline of the steer. Also,



## WASHING

A good washing is very important. Use lots of soap suds and rinse thoroughly.



## DRYING

After a good washing, work the hair until dry. If you have a blower, it will aid in fluffing the hair, which is important especially during the winter months.



the sides along with the back should be blocked in order to make the steer look his best. Each steer needs to be blocked a slightly different way.

About twenty four hours before the show, or more according to the type of steer, all grasses and other greens should be removed from him. The grain ration should be tightened and again according to the steer increase the hay ration.

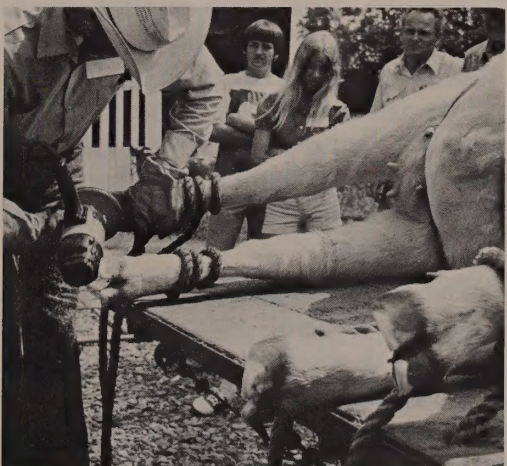
The night before the show remove the water from the steer. At this time you may want to wash the steer with a mild soap, then brush very vigorously to restore natural body oil to have more manageable hair.

The morning of the show you will want to exercise the steer lightly. Also, water and feed lightly, depend-



#### **BRUSHING**

Brushing and combing adds lustre to the hair bringing the natural oils back into the hair after washing.



#### **HOOF TRIMMING**

The hoofs of your calf sometimes need special attention. Trimming the feet as shown with the use of a turntable make the job easy on the calf and prevent injury.

ing on when you are going to show during the day. This will help to ensure proper fill at showtime.

Now it is time to prepare the animal for the showing. After you have removed all dirt from the steer's hair either by blowing or brushing you are ready to start preparing the hair for the showing. By using an oil based hair gloss, you make the hair more manageable, and gives it a shiny appearance. The tail should be back combed or ratted. This helps

give the steer the appearance of a thicker quarter. By using a soap stone or wax you can help give the steer a heavier appearance of bone. This should be applied from the hoof through the knee. The hair should then be pulled up.

Each showman has ways and ideas how a steer should be presented and how to go about it; but each strives toward presenting a steer with a maximum amount of balance and red meat.

## **CATTLE TERMS YOU SHOULD KNOW...**

To do a good job of feeding your beef project you must be acquainted with feeds and feed terms.

#### **GESTATION OR PREGNANCY PERIOD...**

The time from when the cow or heifer is bred until she calves; average gestation period of beef cow is 283 days.

#### **HEAT PERIOD...**

The cow or heifer may show signs of heat for as long as 24-36 hours; however, the length she can be bred is around 12 hours.

#### **HEAT PERIOD INTERVALS...**

Unless fertilization takes place, the cow or heifer will come back in heat in about three weeks or 21 days, average.

#### **OUTCROSSING...**

Mating of relatively unrelated animals within the same breed.

#### **INBREEDING...**

Mating of related animals

#### **AGE TO BREED...**

Heifers should be from 16 to 20 months of age. Heifers will start coming in heat at about six to seven months of age, so be careful to keep bulls away from the heifer until she is old enough to breed.

#### **NUTRIENT...**

A term used to refer to the chemical substances contained in feed that are needed for supporting animal life. The main nutrient groups are carbohydrates, fats, proteins, miner-

als and vitamins.

#### **CARBOHYDRATES...**

Compounds composed of three main elements—carbon, hydrogen, oxygen. They form the framework of plants and serve as fuel to maintain body temperature and to furnish energy for body processes. They are the chief source of nutrients for fattening animals.

#### **FATS...**

Also supplies energy and heat and builds fatty tissue. Fats are almost completely digestible.

#### **PROTEINS...**

They not only contain carbon, hydrogen and oxygen, but also nitrogen. Protein makes up most of the muscles, internal organs and such tissues as skin, hair and horn.

#### **MINERALS...**

Generally found in feeds in small amounts but are very important. Minerals make up the bone and have vital functions in the body's soft tissues.

#### **CARBONACEOUS FEED...**

One having a high percentage of carbohydrates and fat. Example: Grain sorghum and corn.

#### **NITROGENOUS FEED...**

One having a relatively high percentage of digestible protein. Example: Soybean meal, cottonseed meal.

#### **CONCENTRATES...**

Refer to grain and protein supplements which are low in fiber and highly digestible.

#### **ROUGHAGES...**

Refers to hay, silage, straw and grass which are less digestible and contain more fibre.



# AMERICAN JUNIOR SHORTHORN ASSOCIATION AND SUPPORTING STATE ORGANIZATIONS

## STATE WIDE ORGANIZATION...

Some years back the active junior Shorthorn breeders within various states decided it was time to organize and become an active promotional group complimenting the adult Shorthorn and Polled Shorthorn breeders in the United States. Thus, became the individual State Junior Associations. The Junior Shorthorn program is a year-around affair. However, May, June, July, and August are strategic months. During this period juniors hold their state field days, junior preview shows, twilight education meetings, judging contests, type demonstration events, and county and state shows. Everyone is invited to participate in their state activities which include:

## BOOSTING HEIFER PROJECTS...

Award a quality registered heifer to outstanding junior club member of the year. Going to a good home, this award heifer can be the foundation for a boy's or girl's future in the cattle business.

## PRE-SHOW STEER AND HEIFER DAY...

These spring and early summer field days offer class competition for steers and heifers with ribbon and trophy awards. They present an opportunity for junior exhibitors to polish up on grooming and showmanship skills in preparation for the big test of regular fairs. The experience of adults can be shared with the juniors exchanging ideas on feeding, grooming, and showing problems.

## CLUB STEER AND HEIFER SALES...

This project will make it possible for junior members to obtain quality steers and heifers. Such sale events completely managed by juniors, under adult supervision, can give sound business training, and will aid the junior association financially.

## STATE ACHIEVEMENT AWARDS...

To better recognize the efforts of juniors and adults, who put forth the extra effort needed for a successful organization, awards of achievement and scholarships are presented to adults, boys, and girls.

## ANNUAL ACHIEVEMENT AND GET ACQUAINTED GATHERINGS...

These events are best staged in conjunction with the big junior events of the year. Perhaps, the state fair because this is a great place to contact new members. Also, the junior association can sponsor a booth and hand out literature on their organization and their breed.



The Shorthorn Lassies, long a part of the Shorthorn scene, provide good support and friendly, pretty atmosphere.

## AMERICAN JUNIOR SHORTHORN ASSOCIATION AFFILIATION...

In 1968 representatives from seventeen state chapters attended the first National Youth Conference where officers and directors were elected, thus was the beginning of the American Junior Shorthorn Association. From then on this has been an annual event usually held in the summer. This Conference provides the opportunity for state delegates to exchange ideas and compete for prizes in the motto, speech, scrapbook, and showmanship contests, and to elect their new officers and directors.

## AMERICAN JUNIOR SHORTHORN ASSOCIATION SPONSORS NATIONAL HEIFER SHOW...

The National Junior Heifer Show held each year is open to all junior members of the National Association. Rotated to different locations each year, this event provides strong competition among some of the finest heifers and junior exhibitors known to the breed.

## AMERICAN SHORTHORN ASSOCIATION'S PARTICIPATION...

The American Shorthorn Association plays a big role in the success of the A.J.S.A. Besides contributing to premiums paid junior exhibitors at state and national shows, they award bars of merit for junior membership badges to those who exhibit champion steers and heifers. The A.S.A. also provides ribbons and trophies; prints field day programs; sponsors the two annual Junior newsletters; and makes available literature. This in addition to field representation at junior events.

The American Shorthorn Association and Don Longley Memorial sponsors three \$400 scholarships for Shorthorn and Polled Shorthorn junior members of the association who are planning to attend college.

A Junior Breeder of the year is recognized from all association junior members. Nominated by their state organizations, finalists are screened for their contributions to breed improvement and promotion.



# PLANNING FOR A FIELD DAY



The following points are suggestions for Junior Associations to follow when planning a field day or judging work-out:

1. Set date and location at least three (3) months in advance

- a. Start planning program and contact special guests
- b. Send first notice to include date and location
- c. Contact County Agent or FFA Instructor and ask for his help in providing judging cards, etc..
- d. Notify breed Association representative and breed publication to be listed in calendar of coming events.

2. One month before event, a news release with complete details should be sent

- a. Contact and work with host
- b. Re-contact County Agent for judging cards, etc..
- c. Locate P.A. System if needed
- d. Work out lunch schedule
- e. Temporarily select cattle to be used and be sure they are broke to lead if possible.
- f. For Junior Preview Show, Junior Association must locate ribbons, prizes, and a judge.

3. Points to follow the day of the event

- a. Registration and judging cards distributed
- b. Break into groups and inform contestants of days activities.
- c. If this is an evening program, follow same steps, but keep it short.



**The awards for tireless effort result in National Recognition.**



# ***"THE BREED THAT BELONGS ON BOTH SIDES OF THE FENCE"***



AMERICAN  
***Shorthorn***  
ASSOCIATION

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